IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

Claims 1-10 (canceled)

11. (new) Digital printing ink comprising pigments having a maximum particle size not more than 1 micron, wherein the digital printing ink is produced by a method comprising:
(a) dispersing pigments in a mixture comprising polymerizable monomers and oligomers, which includes polyol acrylate;
(b) diluting the mixture with monofunctional and multifunctional acrylic monomers until a viscosity of between 10 and 30 centipoises is achieved, between 10% and 25% of total acrylic monomers are monofunctional acrylic monomers, isobornyl acrylate is among the monofunctional acrylic monomers, between 50% and 90% of total acrylic monomers are multifunctional acrylic monomers, and bifunctional and trifunctional acrylic monomers are among the multifunctional acrylic monomers;
(c) introducing a photoinitiator system, which starts polymerization of the monomers and oligomers by irradiation with ultraviolet light, to the diluted mixture; and
(d) filtering to retain particles bigger than 1 micron, thereby obtaining the digital printing ink as a result.

12. (new) Digital printing ink according to claim 11 characterized by having hexanediol diacrylate among the bifunctional acrylic monomers.

13. (new) Digital printing ink according to claim 11 characterized by having tripropylene glycol diacrylate among the bifunctional acrylic monomers.

14. (new) Digital printing ink according to claim 12 characterized by having tripropylene glycol diacrylate among the bifunctional acrylic monomers.

15. (new) Digital printing ink according to claim 11 characterized by having dipropylene glycol diacrylate among the bifunctional monomers.

16. (new) Digital printing ink according to claim 12 characterized by having dipropylene glycol diacrylate among the bifunctional monomers.

17. (new) Digital printing ink according to claim 13 characterized by having dipropylene glycol diacrylate among the bifunctional monomers.

18. (new) Digital printing ink according to claim 14 characterized by having dipropylene glycol diacrylate among the bifunctional monomers.

19. (new) Digital printing ink according to claim 11 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.

20. (new) Digital printing ink according to claim 12 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.

21. (new) Digital printing ink according to claim 13 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.

22. (new) Digital printing ink according to claim 14 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.

23. (new) Digital printing ink according to claim 15 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.

24. (new) Method of using digital printing ink according to claim 11, the method comprising: printing the ink on a media and irradiating the ink with ultraviolet light, which fractures molecules of the photoinitator system and turn them into free radicals, to set dispersed pigments on the media by polymerization of the monomers and oligomers.

25. (new-withdrawn) Method of producing digital printing ink comprising pigments having a maximum particle size not more than 1 micron, the method comprising:
(a) dispersing pigments in a mixture comprising polymerizable monomers and oligomers, which includes polyol acrylate;
(b) diluting the mixture with monofunctional and multifunctional acrylic monomers until a viscosity of between 10 and 30 centipoises is achieved, between 10% and 25% of total acrylic monomers are monofunctional acrylic monomers, isobornyl acrylate is among the monofunctional acrylic monomers, between 50% and 90% of total acrylic monomers are multifunctional acrylic monomers, and bifunctional and trifunctional acrylic monomers are among the multifunctional acrylic monomers;
(c) introducing a photoinitiator system, which starts polymerization of the monomers and oligomers by irradiation with ultraviolet light, to the diluted mixture; and
(d) filtering to retain particles bigger than 1 micron, thereby obtaining the digital printing ink as a result.

26. (new-withdrawn) Method according to claim 24 characterized by dispersion of the pigments in the mixture by milling at a constant temperature between 35°C and 80°C to an average particle size between 0.1 and 0.8 microns is obtained.

27. (new-withdrawn) Method according to claim 24 characterized by having hexanediol diacrylate among the bifunctional acrylic monomers.

28. (new-withdrawn) Method according to claim 24 characterized by having tripropylene glycol diacrylate among the bifunctional acrylic monomers.

29. (new-withdrawn) Method according to claim 24 characterized by having dipropylene glycol diacrylate among the bifunctional monomers.

30. (new-withdrawn) Method according to claim 24 characterized by having ethoxylated trimethylolpropane triacrylate among the trifunctional acrylic monomers.